

**Kendall Swenson Stanley**

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**Education**

PhD, Computer Science, December 1997, UC Berkeley

Advisor: Dr. James Demmel

Thesis Title: Execution Time of Symmetric Eigensolvers

B.S. with honors, Mathematics, December 1978 Purdue University

**Publications**

Sala M., Stanley K, On the Design of Interfaces to Sparse Direct Solvers, in preparation, to be submitted to ACM Transactions on Mathematical Software

Laskowski M, Biller S, Kajstura T, Prusty R, Stanley K, Expression Profiling of Auxin-Treated *Arabidopsis* Roots: Toward a molecular analysis of lateral root emergence. To appear: Plant Cell Physiol 2006

Heroux MA, Bartlett RA, Howle VE, Hoekstra RJ, Hu JJ, Kolda TG, Lehoucq RB, Long KR, Pawlowski RP, Phipps ET, Salinger AG, Thornquist HK, Williams A, Stanley KS, An Overview of the Trilinos Project, ACM Transactions on Mathematical Software, Vol. V, No. N, Dec. 2004, p. 1-27

Batzoglou S, Jaffe DB, Stanley K, Butler J, Gnerre S, Mauceli E, Berger B, Mesirov JP, Lander ES. ARACHNE: a whole-genome shotgun assembler" Genome Research, Jan. 2002.

J. Choi, J. Demmel, I. Dhillon, J. Dongarra, S. Ostrouchov, A. Petitet, K. Stanley, D. Walker, and R. C. Whaley. Installation Guide for ScaLAPACK. LAPACK Working Note #93. 1995, Updated Aug. 2001.

L. S. Blackford, J. Choi, A. Cleary, E. D'Azevedo, J. Demmel, I. Dhillon, J. Dongarra, S. Hammarling, G. Henry, A. Petitet, K. Stanley, D. Walker, R. C. Whaley. ScaLAPACK Users' Guide" (SIAM 1997)

Z. Bai, J. Demmel, J. Dongarra, A. Petitet, H. Robinson, and K. Stanley. The Spectral Decomposition of Nonsymmetric Matrices on Distributed Memory Computers. SIAM Journal of Scientific Computing, Sept. 1997.

J. Choi, J. Demmel, I. Dhillon, J. Dongarra, S. Ostrouchov, A. Petitet, K. Stanley, D. Walker, and R. C. Whaley . ScaLAPACK: A Portable Linear Algebra Library for Distributed Memory Computers - Design Issues and Performance." LAPACK Working Note #95, March 1995.

## Honors and Awards

- R&D 100 Award. Trilinos named "one of 100 most significant new technology products for 2004."
- Trilinos won the High Performance Computing Software Challenge Award at SC2004, the premier conference for High Performance Scientific Technical Computing, for best practices in software engineering in High Performance Computing Software.
- Gordon Bell Prize, 2nd highest performance in a production code, 1998
- NSF Graduate Fellowship, 1992
- 21<sup>st</sup> nationally, Putnam Mathematical Competition, 1977
- Phi Beta Kappa

## Teaching Experience

Lecturer, University of Massachusetts, Amherst, Fall 2000

Taught CMPSCI 311: Introduction to Algorithms

A required course for majors, enrollment: 65, primarily juniors.

Teaching assistant for CS 252, David Patterson's Graduate Computer Architecture class, taught through National Technical University, Spring 1993

## Recent Presentations

Stanley, K. "Amesos - recent and future developments", Trilinos Users Group, November 2004, Albuquerque, New Mexico.

Stanley, K. "Trilinos+Amesos - Making  $AX=B$  as Easy as it Sounds" SIAM Annual meeting, Portland, Oregon, July 12-16, 2004

Davis, T. and Stanley, K. "Sparse LU Factorization of Circuit Simulation Matrices" SIAM Conference on Parallel Processing for Scientific Computing, San Francisco, CA Feb 25-27, 2004

Stanley, K. "Amesos, an Interface to Sparse Direct Solvers", Trilinos User Group, October 2003, Albuquerque, New Mexico.

## Abstracts

Laskowski, M, Biller, S, Grisafi, P, Hua, J, Palmer, C, Prusty, R, Stanley, K, , and Fink, G. Expression profiling of auxin-treated roots reveals a growth signature and suggests multiple mechanisms for IAA homeostasis 14<sup>th</sup> International Conference on Arabidopsis Research, 2003. <http://www.arabidopsis.org/news/14ArabAbstract.pdf>

Biller, S.J., Prusty, R., Hua, J., Grisafi, P., Stanley, K., Palmer, C., Fink, G., & Laskowki, M. Microarray-based analysis of auxin response in Arabidopsis roots identifies novel early auxin response genes. 13<sup>th</sup> International Conference on Arabidopsis Research, 2002. <http://www.arabidopsis.org/news/abstractsArab2002.pdf>

M. Sears, K. Stanley, G. Henry. Application of a high performance parallel eigensolver to electronic structure calculations'. Preprint, Supercomputing 98, Orlando FL, 1998.

J. Demmel, J. Dongarra, S. Hammarling, S. Ostrouchov, and K. Stanley.  
The Dangers of Heterogeneous Network Computing: Heterogeneous Networks Considered Harmful, Proceedings Heterogeneous Computing Workshop January 1996, p. 64-71.

J. Demmel, K. Stanley, The Performance of Finding Eigenvalues and Eigenvectors of Dense Symmetric Matrices on Distributed Memory Computers. Proceedings of the Seventh SIAM Conference on Parallel Processing for Scientific Computing. San Francisco, Feb 1995

## **Work and Research Experience**

### **3/02-present**

Sandia National Labs. Consultant for Mike Heroux. Designed and implemented Amesos, the direct solver package in Trilinos. Performance analysis of sparse direct solvers.

### **3/01-3/02**

Sandia National Labs. Consultant for Bruce Hendrickson. Application of Numerical Linear Algebra techniques to Computational Biology, specifically microarray analysis.

### **1/01-6/01**

Compaq Research Labs. Benchmark performance analysis.

### **1/00-12/00**

MIT/Whitehead Center for Genome Research. I wrote a code which has now grown into the first public domain code for assembling a mammalian genome.

### **3/98-12/99**

UC Berkeley. Post-doctoral research. Releasing our symmetric eigensolver to the public domain.

### **12/97-12/99**

Sandia National Labs. Consultant. Achieved 605 Gigaflops on a real application using our symmetric eigensolver.

### **6/85-6/90**

Weitek, Sunnyvale, CA. Software Engineer.

### **6/82-6/85**

Hitachi Microsystems International, San Jose, CA. Software Engineer.

### **6/80-6/82**

ESL, Sunnyvale, CA. Software Engineer.

### **1/79-6/80**

E-Systems, Garland, TX. Software Engineer.

## **References available upon request**